



**Supplementary information, Figure S5** Tube formation, nitric oxide secretion and endothelial-to-mesenchymal transition potential of endothelial cells derived from the human Isl1<sup>+</sup> progenitors.

(A, B) Tube formation assays using the FACS-purified CD144<sup>+</sup>CD31<sup>+</sup> ECs differentiated from the day-7 human Isl1-cre eGFP<sup>+</sup> cells in the presence of VEGF-A for 7 days (Isl1-ECs). The cells were harvested and cultured in matrigel overnight. Live images were taken under the (A) phase contrast or (B) fluorescent microscopes, scale bars = 100  $\mu$ M. (C) Immunostaining of eNOS expression in the Isl1-ECs, scale bar = 5  $\mu$ M. (D) ELISA analyses using nitric oxide (NO)-containing supernatant cultured with the Isl1-ECs. (E) qPCR data showing expression levels of mesenchymal cell markers ( $\alpha$ -SMA and Sm22- $\alpha$ ) in Isl1-ECs cultured with TGF- $\beta$  for 7 days, expression levels were compared to that of Isl1-ECs cultured in the same condition without TGF- $\beta$  (value on y-axis = 1).